

# SIGMASHIELD 460

4 pages

October 2009  
Revision of November 2007

<b>DESCRIPTION</b>	two component high solids glassflake reinforced polyamine adduct epoxy coating
<b>PRINCIPAL CHARACTERISTICS</b>	<ul style="list-style-type: none"> <li>- excellent abrasion and impact resistance</li> <li>- suitable for use on ice-going vessels</li> <li>- excellent resistance to corrosion</li> <li>- long term protection at areas subject to heavy wear and tear</li> <li>- resistant to splash and spillage of a wide range of chemicals</li> <li>- very low water permeability, due to glassflake barrier</li> </ul>
<b>COLOURS AND GLOSS</b>	black (other (light) colours on request) - gloss
<b>BASIC DATA AT 20°C</b>	(1 g/cm <sup>3</sup> = 8.25 lb/US gal; 1 m <sup>2</sup> /l = 40.7 ft <sup>2</sup> /US gal) (data for mixed product)
Mass density	1.5 g/cm <sup>3</sup>
Volume solids	81 ± 2%
VOC (supplied)	max. 165 g/kg (Directive 1999/13/EC, SED) max. 246 g/l (approx. 2.0 lb/gal)
Recommended dry film thickness	250 - 400 µm depending on system
Theoretical spreading rate	3.2 m <sup>2</sup> /l for 250 µm, 2.0 m <sup>2</sup> /l for 400 µm *
Touch dry after	3 hours
Overcoating interval	min. 16 hours * max. 28 days *
Full cure after	5 days *  (data for components)
Shelf life (cool and dry place)	at least 12 months * see additional data
<b>RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES</b>	<ul style="list-style-type: none"> <li>- steel; blast cleaned to ISO-Sa2½, blasting profile 40 - 70 µm</li> <li>- suitable primer; (e.g. SigmaShield 220 (LT), SigmaCover 280 (LT)) dry and free from any contamination</li> <li>- substrate temperature should be at least 5°C and at least 3°C above dew point during application and curing</li> </ul>
<b>SYSTEM SPECIFICATION</b>	marine <span style="float: right;">system sheets: 3101, 3102</span>

# SIGMASHIELD 460

October 2009

## INSTRUCTIONS FOR USE

mixing ratio by volume: base to hardener 75 : 25

- the temperature of the mixed base and hardener should preferably be above 15°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- very good mechanical mixing of base and hardener is essential
- thinner should be added after mixing the components
- filters should be removed from spray equipment

Induction time

none

Pot life

1.5 hour at 20°C \*

\* see additional data

## AIRLESS SPRAY

Recommended thinner

Thinner 91-92

Volume of thinner

0 - 5% for dft of about 400 µm

Nozzle orifice

approx. 0.53 - 0.79 mm (= 0.021 - 0.031 in)

Nozzle pressure

19 - 22.5 MPa (= approx. 190 - 225 bar; 2700 - 3200 p.s.i.)

## AIR SPRAY

Recommended thinner

Thinner 91-92

Volume of thinner

5 - 10%, depending on required thickness and application conditions

Nozzle orifice

1.5 - 2 mm

Nozzle pressure

0.3 - 0.4 MPa (= approx. 3 - 4 bar; 43 - 57 p.s.i.)

## BRUSH

- only for touch up and spot repair
- due to thixotropy it is difficult to obtain a smooth film by brush although this does not affect performance

## CLEANING SOLVENT

Thinner 90-53

## SAFETY PRECAUTIONS

for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets

this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes

## ADDITIONAL DATA

### Film thickness and spreading rate

theoretical spreading rate m <sup>2</sup> /l	3.2	2.0
dft in µm	250	400

maximum recommended dft for complex structures is 250 µm

max. dft when brushing:

80 µm

# SIGMASHIELD 460

October 2009

### Overcoating table for SigmaShield 460 for dft up to 400 µm

substrate temperature	5°C	10°C	20°C	30°C	40°C
minimum interval	48 hours	32 hours	16 hours	12 hours	8 hours
maximum interval	28 days	28 days	28 days	14 days	7 days

- surface should be dry and free from chalking and contamination

### Curing table for dft up to 400 µm

substrate temperature	touch dry	dry to handle	full cure for immersion in sea water
5°C	16 hours	30 hours	14 days
10°C	8 hours	16 hours	10 days
20°C	3 hours	8 hours	5 days
30°C	2 hours	5 hours	4 days
40°C	1 hour	3 hours	3 days

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)

### Pot life (at application viscosity)

10°C	3 hours
20°C	1.5 hour
30°C	45 min.

### Worldwide availability

Whilst it is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

### REFERENCES

Explanation to product data sheets	see information sheet 1411
Safety indications	see information sheet 1430
Safety in confined spaces and health safety	
Explosion hazard - toxic hazard	see information sheet 1431
Safe working in confined spaces	see information sheet 1433
Directives for ventilation practice	see information sheet 1434

---

# SIGMASHIELD 460

---

October 2009

---

## LIMITATION OF LIABILITY

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the Sigma Coatings products made by PPG Protective & Marine Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

PPG Protective & Marine Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. PPG Protective & Marine Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development.

This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

The English text of this document shall prevail over any translation thereof.

---

	PDS	7952
191640	black	8000002200